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CHARLES ELMORE CROPLEY

In the Supreme Court of the United States

OCTOBER TERM, 1949.

No. 2

GRAVER TANK & MFG. CO., INC.,
THE LINCOLN ELECTRIC COMPANY,
GRAVER TANK & MFG. CORPORATION,
Petitioners,

v.

THE LINDE AIR PRODUCTS COMPANY,
Respondent.

ON WRIT OF CERTIORARI TO COURT OF APPEALS FOR SEVENTH CIRCUIT.

PETITIONERS' REPLY BRIEF UPON REHEARING.

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The short answer to Linde's argument is: The claims measure the grant. Since the claims are expressly confined to "alkaline earth metal silicate" they cannot cover manganese silicate. It follows that there can be no infringement.

Linde, however, says infringement results from the doctrine of equivalents. In weighing that argument, three points need to be kept in mind:

First. The doctrine of equivalents can have no applicability "to the findings of fact in this case" unless it first be shown that the trial court found *as a fact* that the accused flux, although not an alkaline earth metal silicate, is, nevertheless, an equivalent. Linde, accordingly, has made a determined effort to show that the trial court found equivalency as a matter of fact. The attempt founders on the trial court's opinion and findings. (See section I of

petitioners' opening brief upon rehearing, pp. 27-44.) If so, that is the end of Linde's case.

Second. If the trial court did find equivalency as a matter of fact, as Linde argues, the question which then must be faced is whether the doctrine of equivalents, which the five-to-four vote of *Winans v. Denmead*, 15 How. 330, brought into the law in 1853, and which was sporadically applied during the period ending with *Hoyt v. Horne*, 145 U. S. 302, in 1892, has survived the subsequent half century of decisions in this Court rigidly confining patents to their claims.

On this point Linde's argument is that the patentee *needs* the doctrine. Nothing is said about the need of the public to know what the patent monopoly covers, what is foreclosed, what yet remains open, and what the public is to have when the patent expires. Nor does Linde suggest any means by which the patent monopoly is to be confined, if not by its claims. Every patent, apparently, is to be set at large, save only as its limits may be marked, case by case, in the courts.

But if, as petitioners believe (see section II of petitioners' brief, pp. 45-60), this Court's decisions have destroyed the doctrine, used as a device to expand the plain terms of a patent claim, then again Linde's case is at an end.

Third. If the doctrine of equivalents survives, the next inquiry is whether the doctrine can be made broad enough to write manganese silicate into this patent. (See section III of petitioners' brief, pp. 61-72.)

On this point Linde's argument is that Lincoln stole manganese silicate from Linde's patent. Before that charge can be made good, it first must appear that Linde had title, not only to "alkaline earth metal silicate" which the patentees claimed, but also to manganese silicate which they did not claim. If manganese silicate lay in the com-

mon storehouse—either because the prior and now-expired Miller disclosed it, or because the present patentees, by failing to claim it, dedicated it to the world—Linde's attempt to write manganese silicate into its patent must fail.

It is proper, therefore, to inspect Linde's title deeds.

I. DOCTRINE OF EQUIVALENTS CAN HAVE NO APPLICATION TO THIS CASE IN VIEW OF TRIAL COURT'S FINDINGS—EQUIVALENCY WAS NOT FOUND AS FACT BUT BY READING SPECIFICATION AS CLAIM, WHICH, AS PRIOR JUDGMENT SHOWS, IS CLEAR ERROR OF LAW. REASON: CLAIM MEASURES GRANT.

Admittedly, Lincoln's flux is not covered by the claims *as written.*

The trial court, however, adjudged the Lincoln flux an equivalent, not on facts found—for the facts were found the other way—but by expanding the claims by resort to the specification.

1. Trial Court Found Manganese Equivalent, Not Upon Fact Issue, But by Error of Law.

Upon the prior review no claim was advanced that the trial court had determined as a finding of fact that Lincoln's flux was an "equivalent." Linde's argument was (see Linde's brief on the prior review, pp. 57-64) that "there was literal infringement" (p. 58) and "full identity" (p. 63).

However, now that the Court has granted rehearing

"limited to the question of infringement,"

and in that connection has asked for discussion "as to the applicability of the doctrine of equivalents to the findings of fact in this case," Linde is faced with the necessity of showing that the trial court did find as a fact that Lincoln's flux is an equivalent.

This task Linde essays by asserting (1) the determination of equivalency was drawn from disputed evidence, and (2) the trial court merely referred to the specification as "confirmation" of its finding (see Linde's brief, pp. 14-20, 22-3, 61-3).

First. Upon the trial no evidence was offered that manganese silicate, which Lincoln used, was a known equivalent of "alkaline earth metal silicate" in welding fluxes. The evidence to which Linde now points was offered to prove that manganese *is* an alkaline earth metal. The Fishleigh chart, for example (Pltf. Exh. 236, R. 854), purports to show in the box score on its last page that Miller's manganese silicate is an alkaline earth metal silicate. And Linde's chemical expert testified (R. 296-7):

> "Q. Dr. Willard, is or is not manganese an alkaline earth metal? • • •
>
> A. I think that in the sense of the patent, *it should be included as an alkaline earth metal*,—in the sense in which it is used in the patent."

But the trial court found "Manganese is *not* an alkaline earth metal" (Finding 12, R. 925).

Now that evidence, rejected by the trial court, is warmed over and offered to this Court as evidence that manganese silicate was a known equivalent of "alkaline earth metal silicate" as used in welding fluxes. Linde doubles in brass.

Second. Assuming the evidence, if believed, would have supported a factual finding of equivalency, the trial court did not so use it. The conclusion of equivalency (see petitioners' brief, pp. 4-6) was rested solely upon a process of expanding the claims by resort to the specification. For this there is the surest proof. The trial court said so. It said:

> "Whether it [Lincoln] actually infringes these claims depends upon what application is made of the doctrine of equivalents. In that connection, no determination

need be made whether it is a known chemical fact *outside*[1] the teachings of the patent that manganese is an equivalent of calcium or magnesium." (R. 920.)

Stopping at this point, note that the trial court did not accept what now is claimed constituted factual proof of equivalency, but expressly refused to go *outside* the patent to resolve the issue. No such determination *outside* the patent "need be made" the trial court said.

Why did the trial court refuse to travel *outside* the language of the patent?

Because—continuing the quotation interrupted above:

"In the patent [that is, in the specification, R. 936, col. 1, lines 62-5] the inventors state,

> 'We have used calcium silicate and silicates of sodium, barium, iron, manganese, cobalt, magnesium, nickel and aluminum, both in binary and ternary combinations, in various proportions.'

Thus, the fact that manganese is a proper substitute for calcium silicate as a major ingredient of the welding composition invented by Jones, Kennedy and Rotermund is fully disclosed *in the specification* of their patent. * * * Accordingly, it is concluded that the patent itself fully discloses that welding compositions composed chiefly of manganese silicate and prepared according to the teachings of the patent are equivalent to those in which the alkaline earth metals are the principal constituents."[2] (R. 920.)

The trial court thus unmistakably announced that the conclusion of equivalency rests upon no factual issue. The

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[1] The emphasis is the trial court's. This emphasis upon the point that the court refused to ground decision of the question of equivalency upon any factual basis or upon anything outside the four corners of the patent is the more unusual as in only one other place did the trial court underscore its meaning. It marks the trial judge's scrupulous care to make clear the precise ground of decision and to do so with such certainty as to make it impossible for anyone to misunderstand.

[2] Emphasis supplied throughout, except as otherwise indicated.

conclusion is grounded solely upon a reading of the patent. This is a plain question of law.

All pretense that equivalency was found as an issue of fact must, therefore, vanish. With it vanishes any possibility of applying the doctrine of equivalents, for, unless the findings show the accused flux to be an equivalent, the doctrine can have no applicability "to the findings of fact in this case."

Finding there was, but, as has been seen, that finding is enmeshed in the same error of law which destroyed claims 24 and 26. If, as this Court held upon the prior review, claims 24 and 26 cannot be *narrowed* by resort to the "We have used" sentence in the specification, claims 18, 20, 22 and 23 obviously cannot be *enlarged* by resort to that sentence.

Indeed, the fact findings which the trial court did make—which are not entwined in errors of law—demonstrate *as a fact* that manganese silicate is not an equivalent. The trial court found as facts (1) "Manganese is not an alkaline earth metal" (Finding 12, R. 925), and (2) "Lincolnweld composition induces a greater amount of manganese into the weld metal" (R. 919; see also petitioners' brief, p. 31, note 27).

2. Manganese Could Not Be Held Equivalent; Failure to Claim Operates as Dedication.

Whatever scope the doctrine of equivalents may have, it cannot write into a patent claim a composition the patentees knowingly excluded therefrom. The patentees told what they had used. Then they told what they *preferred*. Then they claimed what they *preferred*. And they did not claim what they said they did not prefer. Manganese silicate, therefore, if within the discovery, could not be adjudged an equivalent because the patentees, by failing to claim it, dedicated it to the world. (See petitioners' brief, pp. 37-42.)

Linde has two answers.

First, Linde says "petitioners, with complete lack of candor, talk as if the patented welding composition were a single element" (Linde's brief, p. 66). The two fluxes are the same, it is said, "with one exception" (Linde's brief, p. 11). The argument is that the patented flux consists of many ingredients; that Lincoln has merely substituted manganese silicate for one of the many (see Linde's brief, pp. 3-4, 11, 22, 66, and the colored chart[3] facing p. 14).

Mark well: The essential component of the patented flux is an "alkaline earth metal silicate." This must be present "in major proportion." This is the *single* ingredient called for by claim 18. The other three claims call, in addition, for a "fluoride," the only purpose of which is to lower the melting point. This has had a long use in fluxes and is not claimed to have been discovered by these patentees (see petitioners' brief, p. 22, note 22). Thus, *the single essential element of all of the claims is "a major*

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[3] The two fluxes can be made to look alike by coloring both yellow and blue as Linde does in its chart (facing p. 14 of Linde's brief). But this cannot disguise the fact that Lincoln's flux contains 48.19% manganese oxide, and Linde's contains none. The 48.19% manganese oxide in Lincoln's flux, combining with the 40.30% silicon dioxide, produces (R. 920; Finding 24, R. 926) a flux *consisting almost entirely of manganese silicate*, of which there is none in Linde's flux.

Likewise, by showing that each flux consists of a basic and an acidic constituent, the illusion sought to be created is that the two fluxes are the same. *All* silicates consist of a basic and an acidic constituent (R. 262-4). But, as the trial court found, all are not operable (Finding 17, R. 925-6).

Similarly the bottle chart (facing p. 12 of Linde's brief) seeks to create the impression that the two fluxes are the same. All that the chart shows is that, if one starts at the top with calcium, the end result is Linde's calcium silicate; if one starts with manganese, the end result is Lincoln's manganese silicate. In like manner, if further bottles of metals were added to the chart the end result would be a silicate of the particular metal used at the start. Some would work; some would not (Finding 17, R. 925-6). In short, what the chart shows is how to make a silicate. But it has nothing to do with the question of infringement here before the Court.

proportion of alkaline earth metal silicate." If that one element be eliminated there is nothing left of the claims. (See claims, petitioners' brief, appendix p. 77.)

On the other hand, Lincoln's flux "is composed principally of manganese silicate" (R. 919-20; Finding 21, R. 926) which "is *not* an alkaline earth metal" (Finding 12, R. 925). It includes also, for lowering the melting point, 3.92% calcium fluoride. The only additional ingredients are miscellaneous impurities, negligible in amount and unavoidable in any commercial product of this type. Thus, analysis of the Lincoln flux shows (Finding 21, R. 926):

Ingredient		*Per Cent*	
Manganese silicate	Manganese oxide	48.19	88.49%
	Silicon dioxide	40.30	
	Calcium fluoride	3.92	
Miscellaneous impurities	Calcium oxide	2.66	7.46%
	Alumina	1.88	
	Ferric oxide	1.33	
	Titanium dioxide	.10	
	Magnesium oxide	.60	
	Barium oxide	.87	
	Sulphur	.02	

These impurities are present, not by design, but by accident. Fluxes are not made of chemically pure ingredients;[4] they are produced from commercially mined ores. These impurities do no harm; it would be prohibitively costly to remove them (R. 831, 837).

Thus when Linde says the two fluxes are the same, "with one exception," it is plain that this "one exception" is the whole of the claim. Eliminate it and nothing is left. The difference is at the precise point of novelty.

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[4] The patent reports "a specific instance" where "The materials used were of the purest quality used in the ceramic industries, but the fused product showed the presence, on analysis, of about *5% alumina*" (R. 956, col. 2, lines 54-7; see also Kennedy's testimony, R. 86).

However, if it be true, as Linde argues, that its patented flux is not "a single element," then these claims are invalid. They are invalid—if Linde's present argument be accepted—because they *fail to disclose* the essential ingredients of the flux. It was for this reason this Court held claims 1, 3, 4, 7, 8, 9 invalid. They were held invalid because they failed to disclose "the essential chemical constituents of the welding composition" (336 U. S. 271, 278).

On the other hand, if the claims are valid, as the Court has held, then they are not infringed, because "the patent of the product *cannot* extend beyond a product having the designated ingredient." *Holland Furniture Company v. Perkins Glue Company* (1928), 277 U. S. 245, 254-6.

Equally reckless is Linde's argument that its flux "never existed prior to this invention, and it has no other known use in industry" (Linde's brief, pp. 3, 7). The trial court found "The welding composition principally used in attaining this success has been so-called Unionmelt 20 containing a major proportion of calcium silicate" (Finding 9, R. 925). Calcium silicate—i.e., limestone and sand—is what the steel industry has used for generations, not only in the open hearth process but also in the electric furnace, as a blanket for molten metal in the manufacture of steel. To that the steel industry adds fluorspar. This is a naturally occurring calcium fluoride. It is put there for the same reason Linde adds calcium fluoride to its flux. (R. 723.)

Second, Linde says manganese silicate cannot be held dedicated to the world because the issue was not pleaded (Linde's brief, p. 74). This is not a matter of pleading; it is a matter of construction of the patent. (See petitioners' brief, pp. 39-40.) The "claim actually made operates in law as a disclaimer of what is not claimed," *Mahn v. Harwood* (1884), 112 U. S. 354, 361; it is "in law, a dedication to the public of that which is not claimed." *Miller v. Brass Company* (1881), 104 U. S. 350, 352.

In summary then—on this point: The trial court did not, and could not, declare equivalency as a finding of fact. If so, that is the end of Linde's case.

But if the trial court did find equivalency, not by reading the specification as a claim, but as a finding of fact, then the question is, has the doctrine of equivalents, as a device to expand claims, survived this Court's decisions of the last half century?

II. DOCTRINE OF EQUIVALENTS APPLIED TO EXPAND CLAIMS HAS NO PLACE IN PATENT LAW, HAS BEEN UNDERMINED BY THIS COURT'S CASES, AND SHOULD BE EXPRESSLY REPUDIATED.

This Court's decisions have destroyed the doctrine of equivalents used as a tool to expand the claims of a patent (see section II of petitioners' brief, pp. 45-60).

Linde, with a minor divergence,[5] does not challenge petitioners' analysis of the cases.

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[5] Linde thinks (Linde's brief, p. 47) that in two instances since 1892 the Court has applied the doctrine of equivalents to give to a patentee more than his claims as written call for. These are *Sanitary Refrigerator Company v. Winters* (1929), 280 U. S. 30, and *National Cash Register Company v. Boston Cash Indicator and Recorder Company* (1895), 156 U. S. 502.

In *Sanitary Refrigerator*, as pointed out in petitioners' opening brief (p. 56, footnote), the question was, not whether the claims could be expanded, but only whether they should be narrowed to the specific device described in the specification, and if so narrowed, whether they were infringed. The accused device utilized all the elements of the patented device, but merely reversed the position of two of the parts (pp. 40-1). The Court found the devices were (p. 41) "substantially identical, operating upon the same principle, and accomplishing the same result in substantially the same way, and that the slight change in the form of the Dent latch, is merely a colorable departure from the Winters and Crampton structure." The Court held that although (p. 42) "the invention must be restricted to the form shown and described by the patentee *and cannot be extended* to embrace a new form which is a substantial departure therefrom, it is nevertheless infringed by a device in which there is no substantial departure from the description in the patent, but a mere colorable departure therefrom."

National Cash Register is the same type of case. The comparison was with the specific device set forth in the specification. The Court gave no indication whatever that it was enlarging the claim as written (156 U. S. 502, 507) to accommodate something more in the name of equivalents.

Linde's answer is that the patentee needs the doctrine of equivalents.

Nothing is said about the public's need for protection from the overhanging threat of claims uncertainly expanded beyond their own clear terms. It must be remembered that "the primary purpose of our patent laws is not the creation of private fortunes for the owners of patents," *Motion Picture Patents Company v. Universal Film Manufacturing Company* (1917), 243 U. S. 502, 511, but to safeguard the public interest, "so frequently present but so seldom adequately represented in patent litigation." *Muncie Gear Works, Inc. v. Outboard, Marine & Manufacturing Co.* (1942); 315 U. S. 759, 768. As this Court has warned, "The patent monopoly is not enlarged by reason of the fact that it would be more convenient to the patentee to have it so, or because he cannot avail himself of its benefits within the limits of the grant." *B. B. Chemical Co. v. Ellis* (1942), 314 U. S. 495, 498.

The public's need for protection is emphasized by what has happened under this very patent. Linde now says (Linde's brief, p. 76), "Many years have intervened since Jones and his colleagues made their compounds in 1932—yet what is used in industry right down to date is precisely what the inventors compounded and described in their patent."

What the inventors compounded, described, *and claimed*, was an "alkaline earth metal silicate" flux. Lincoln's flux certainly is not the same. And the reason why others are not in the field is obvious. The overhanging threat of this patent, vigorously exploited, and backed by enormous resources, has barred the way. Note that:

Prior to 1936, when this patent issued, there were two users of deep flux welding in the United States. They were National Tube and Western Pipe. Both used an aluminum silicate flux in Robinoff's submerged arc process.

Ten days after the grant of this patent, Linde sued Western Pipe for infringement of both process and flux claims (R. 393). The suit was settled. A consent decree (Pltf. Exh. 212, R. 394) held the patent valid and Western Pipe entered Linde's empire as licensee.

Two months after this patent issued, National Tube, owner of Robinoff's deep flux patent, charged Linde's patented welding process infringed Robinoff's (R. 418-9, 427; Defts. Exh. 96, R. 425). This controversy also was settled (R. 419). Linde became a licensee under Robinoff (Defts. Exhs. 97A, B, and C, R. 425) and agreed *to pay* to National Tube 1¾ cents for every pound of metal deposited by Linde or its sublicensees. Thereafter it was Robinoff, not Jones, that headed the list of "patent rights" Linde purported to grant (R. 422).

Despite the fact that "what was really invented was that which was claimed and bounded by the composition claims Nos. 18, 20, 22 and 23" (336 U. S. 271, 274), Linde had—until this Court spoke—an overhanging patent covering *all* deep flux welding processes, *all* silicates, *all* metallic silicates. This was backed by the economic power of one of the giants of American industry, the empire of Union Carbide and Carbon Corporation.

Not until this Court spoke, a year ago, did Linde drop its claim to a monopoly of the use of *any* "metallic silicate" as a fluxing material for electric welding (see disclaimer, petitioners' brief, p. 6, note 4), despite the trial court's finding over two years before that many are "inoperative as major constituents in a welding composition" (Finding 17, R. 926), and despite its own expert's testimony (R. 304-5) over a year before that that there are "many silicates in nature" and that many of them would not serve.

But Linde says the patentees need the protection of "equivalents."

To prove this need, the Court is told that what the patentees' actually invented "were nine metallic silicates * * * listed in the specifications" (Linde's brief, p. 38). But, the argument runs, it was impossible under Patent Office rules to claim the nine (Linde's brief, p. 39). Therefore, Linde says, the patentees had to do the next best thing and claim the "alkaline earth metals," which would cover three[6] on this list, and rely upon the doctrine of equivalents for protection for the remaining six (Linde's brief, p. 39).

First. It surpasses belief that counsel, resourceful enough to have 29 claims allowed, including 19 invalid ones—although "what was really invented was that which was claimed and bounded by [four] composition claims"—could not somehow have managed one claim calling for manganese silicate. They didn't try. Although they submitted 91 claims to the Patent Office, not one mentioned manganese silicate (Pltf. Exhs. 125, 126, 127, R. 1043-1136). The reason why no claim was drawn specifically covering manganese silicate is obvious. Counsel realized the prior Miller barred the way.

Second. Linde, in explaining why no claim specifically covering manganese silicate was drawn, says that where a generic claim is allowed, as here, the Patent Office rule "limits species claims to a maximum of three in any one patent" (Linde's brief, p. 40). In any event, if patentable, the nine metallic silicates named in the specification, including manganese silicate, admittedly could have been covered in nine separate patents.

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[6] The alkaline earth metals are four, calcium, magnesium, strontium and barium (Finding 11, R. 925). However, Linde now speaks of three because one of the four, strontium, does not appear in the list of nine named in the specification, which Linde now says constitute the invention.

Even that was unnecessary because, out of the three species claims confessedly allowable, the patentees used but one. The only species claimed "in major proportion" is calcium silicate. They had two to spare. This seems a waste of two claims Linde admits it could have drawn. These two would have reduced from six to four the remaining silicates to be covered by the doctrine of equivalents (Linde's brief, p. 39).

Manifestly, the reason why each of the nine was not specifically claimed is that they were not the invention.

Third. It is not true that Linde could not have covered each of the nine, if patentable.

The Markush-type claim, Linde says, was foreclosed to it because "the nine metals in question are not all found in any single known chemical class" (Linde's brief, p. 40). But Linde has no trouble arguing to the contrary, when purpose serves. All are of a single known chemical class. All are metallic silicates.

Linde now says "two of them, aluminum and calcium, are two of the very three metals which the court refused to permit to be named together in a claim in the *Kingston* case [(C. C. P. A., 1945), 149 F. (2d) 181]" (Linde's brief, p. 40).

Not so. *Kingston* held that a claim to a constituent "such as aluminum, zirconium or calcium" was improper. But *Kingston* held further that the claim would have been proper if it had called for a constituent (p. 183) "selected from the group consisting of aluminum, zirconium and calcium." The vice was not in the grouping; it was in the words " 'such as' coupled with the alternative expression 'or' " which operated to set the invention at large.

Linde has similarly misread *In re Swenson* (C. C. P. A., 1942) 132 F. (2d) 336, (Linde's brief, p. 40). That case also shows that all nine *could* have been claimed in a Markush claim, had they been the invention. As the court there pointed out (p. 339), using *Ex parte Larson*, 422 O.G. 3,

1932 C.D. 17, as an example, a claim to the product "of a fused mixture of copper oxide and an oxide of one of the elements of the group manganese, tungsten, zinc, cadmium and molybdenum" is a proper Markush-type claim because "the group contains only metallic oxides of the stated elements * * *."

Thus the authority Linde relies upon to show that Patent Office rules barred the nine, and that the patentees therefore had to rely upon the doctrine of equivalents, demonstrates the opposite. It shows that under the Markush rule a claim covering a group of metals as in *Kingston*, or metallic oxides as in *Larson*, or metallic silicates as in the instant case was available, if the nine constituted the invention.

No such claim was drawn because no one supposed, until Linde's present brief was written, that the nine were the invention or that they were listed in the specification because they were equivalents.

But whether so or not, the inquiry now is not what *could* they claim, but what *did* they claim.

The asserted need for the doctrine is illusory.

In any event the public's need to know what remains open under a patent is imperative. Recognition of that need is the basis of this Court's decisions rigorously limiting patents to that which the patentee has "distinctly claimed." (See cases collected in petitioners' brief, pp. 39-44.) "The statute makes provision for specification separately from the claims * * *. * * * it is the claim which measures the grant" (336 U. S. 271, 277). How else is the public to know the metes and bounds of a patent?

It will not do to argue that Congress by inaction has approved the doctrine of equivalents as a device to expand patent claims (Linde's brief, pp. 43-4). The lesson to be drawn from Congressional silence is that Congress, having written into the statute in 1870 the express command that the patentee must "distinctly claim" his invention, has approved this Court's rigid enforcement of that command.

If this Court's cases enforcing the requirement of the statute are to remain law, it follows that claims limited to fluxes "containing a major proportion of alkaline earth metal silicate," cannot be infringed by a flux which is not an alkaline earth metal silicate.

Nor will it do to summon *Halliburton Oil Well Cementing Co. v. Walker* (1946), 329 U. S. 1, to the task of writing manganese silicate into this patent (Linde's brief, pp. 24-33, 38, 47, 56). *Halliburton*, with its emphasis upon the function of the claim, and its warning that the (p. 10) "courts *have qualified* the scope of what is meant by the equivalent of an ingredient" authorizes no doctrine of equivalents which would write into a patent something not embraced in the claims as written.

In short, and in summary—on this point:

1. Even in the period beginning with *Winans v. Denmead* (1853), 15 How. 330, and ending with *Hoyt v. Horne* (1892), 145 U. S. 302, the doctrine was of limited scope compared with Linde's present request (see petitioners' brief, pp. 51-2 and note 36, p. 51). It is one thing to find infringement in the substitution of a known equivalent for an element of a combination, where the novelty is in the combination rather than in the specific element; it would be quite another to find infringement where, as here, in lieu of the single essential element of the claims (i.e., alkaline earth metal silicate) a means found to be different (i.e., manganese silicate) is used.

2. Since 1892 this Court has in no case applied the doctrine to write into a patent something not embraced in the claims as written (see petitioners' brief, pp. 52-60). On the contrary this Court has enforced the statutory requirement that what is not claimed is excluded (see petitioners' brief, pp. 39-44 and note 31, pp. 40-1).

Thus, this Court's cases have destroyed the doctrine, used as a device to expand the claims of a patent.

III. IF RULE OF EQUIVALENTS STILL HAS VITALITY, THE DOCTRINE, NO MATTER HOW BROAD, CANNOT ENLARGE CLAIMS TO COVER MANGANESE SILICATE—TO DO SO WOULD BE TO RECALL FROM PUBLIC DOMAIN PRIOR PATENTED AND UNPATENTED FLUXES.

If the doctrine of equivalents survives, it cannot be made broad enough to write manganese silicate into this patent.

1. Manganese Disclosed by Miller—It Therefore Cannot Be Read Into Jones as an Equivalent.

The trial court disposed of the prior Miller, which taught and claimed welding under "a blanket of molten manganese silicate" (R. 969, col. 1, lines 43-4, and R. 971, lines 34-6) by limiting Miller to his preferred form. So limited, Miller "did not teach all that the Jones, *et al.* patent does" (R. 920-1). But in so limiting Miller, read as anticipatory art, the trial court applied to Miller a construction condemned by this Court's cases (see petitioners' brief, pp. 33-6, 64-5). Linde does not now argue to the contrary.

Linde has a different answer.

First. In face of Miller's express declaration that use of manganese silicate as a welding flux "is included in my invention, whether or not the composition is applied to the rod as a coating" (see petitioners' brief, note 6, pp. 8-9), Linde says Miller "is addressed to a coating for a welding rod" (Linde's brief, p. 69). Even if that were true, it would be immaterial. It would be the application of old learning to a new field. *Mandel Brothers, Inc. v. Wallace* (1948), 335 U. S. 291, 296; *Jungersen v. Ostby & Barton Co.* (1949), 335 U. S. 560, 566-7.

Second. From this erroneous premise Linde draws the conclusion that the binder required in using the flux as a coating on the rod "would create the very gases which it was the purpose of the Jones *et al.* patent [and likewise of many other prior patents, as noted in petitioners' brief, pp. 14-6] to prevent" (Linde's brief, p. 69). The short answer is that use of Miller's manganese silicate flux in the operational steps of Robinoff or of Jones (and they are the same, Finding 27, R. 927), eliminates the binder.

Third. Linde says Miller recommends "use of raw manganese ore, which because it is MnO_2, would give off gas on being heated" (Linde's brief, p. 70). Lincoln, like Miller, obtains manganese oxide from manganese ore. Fusion of that ore with silica produces manganese silicate which is then ready to use as a flux and, even according to the teachings of Jones, will not evolve gas.

Fourth. Linde says Miller "contains none of the directions of the Jones *et al.* patent with respect to proportions, preparation, and physical and chemical condition" of the flux (Linde's brief, p. 70). If true this would be immaterial. *Minerals Separation North American Corporation v. Magma Copper Company* (1930), 280 U. S. 400, 402, 404; *Alexander Milburn Company v. Davis-Bournonville Company* (1926), 270 U. S. 390, 401. But it is not true. Miller, like Jones, requires such proportions as will produce a silicate, i.e., stoichiometric proportions. Miller also discloses prefusion.

Fifth. Linde says Miller was "unusable" (Linde's brief, p. 70). Linde derives this from the Fishleigh chart (Pltf. Exh. 236, R. 854). As to many prior art fluxes Fishleigh purports to show they are not operable. But he does not append a similar statement in his discussion of Miller, and nowhere does he discuss the use of Miller's non-preferred prefused manganese silicate. Furthermore, as pointed out above, Lincoln's flux is actually the Miller "preformed flux." Every use of the Lincoln flux is a use of

Miller's disclosure of 1930. The patentees themselves used prefused manganese silicate in their fluxes 70 and 70-A and found it served "admirably" as they advised the Patent Office in their initial application (Pltf. Exh. 125, R. 26, 1043, 1048). The first application was drawn by the patentees (R. 30). They had never heard of the prior Miller (R. 76). The second and third applications, however, were drawn by house counsel for Union Carbide (R. 78, 82, 84) who did know Miller. They omitted from the second and third applications the disclosure that manganese silicate serves "admirably" as the main body of the flux and scrupulously avoided drawing any claim specifically covering manganese silicate (see petitioners' brief, p. 38).

Confined to fluxes "containing a major proportion of alkaline earth metal silicate," claims 18, 20, 22, 23 are valid. That is the flux with which Linde has achieved the success it so much protests (Finding 9, R. 925). But that is no reason for expanding the claims to cover something which is not an alkaline earth metal silicate.

It follows that, whatever scope the doctrine of equivalents may have, it cannot write manganese silicate into this patent.

2. Result of Doctrine, if Here Applied, Will Be to Write Inoperable Fluxes into Patent.

The trial court found manganese silicate an equivalent, as has been seen, only because the patentees in the specification said "We have used * * * manganese." But if that makes manganese silicate an equivalent, it likewise makes each of the other eight, in that list of nine, an equivalent. Such is Linde's claim. The invention, the argument runs, consisted of the nine silicates, for which Linde now asks "protection" in the name of equivalents (Linde's brief, pp. 8, 38-41).

The trouble is, the patent if so enlarged is destroyed because the trial court found only four of the nine operable (see petitioners' brief, p. 69). Moreover, the patentees'

admissions show two of the nine, iron silicate and sodium silicate, are inoperable (see petitioners' brief, pp. 69-70). Since all nine are not operable, the patent if enlarged to embrace them as equivalents is invalid. *The Incandescent Lamp Patent* (1895), 159 U. S. 465, 472, 476; *Corona Cord Tire Company v. Dovan Chemical Corporation* (1928), 276 U. S. 358, 385.

Linde's answer to the point that the trial court found only four operable is that only manganese silicate is now in question. "No issue is raised as to any other flux" (Linde's brief, pp. 71-2). Thus, because manganese silicate is operable, Linde thinks it unimportant whether the others are operable, although all are said to constitute the invention and although it argues that all are to be read into the patent under the doctrine of equivalents.

Linde argues also that Kennedy, one of the patentees, testified that all of the nine silicates will work (Linde's brief, p. 72). What Kennedy was talking about at the point referred to by Linde (R. 127-8), was the "contact" theory on which Linde sought to uphold its invalid process claims. Kennedy would be the last man to testify all of the nine are operable in view of his notebook which shows at least two, iron silicate and sodium silicate, are inoperable (see petitioners' brief, pp. 69-70).

But Linde says "Petitioners' claim is a simple misreading of the inventors' notes" (Linde's brief, p. 72). If so, it is difficult to misread the plain English in which the patentees advised the Patent Office:

> "the results obtained with iron-bearing silicates have not been satisfactory" (R. 1078).

Limited to its terms, the patent is valid. To expand it to cover manganese silicate in the name of equivalents is to destroy it.

3. Manganese Cannot be Equivalent Because Express Prohibitions of the Patent Forbid.

If manganese silicate is an equivalent, it is to be read into each of the claims in lieu of the "major proportion of alkaline earth metal silicate" called for by the claims.

But the patent forbids use of manganese silicate "in major proportion." The patent says manganese oxide, which with silicon dioxide forms manganese silicate, "may be added in *moderate* amounts" (see petitioners' brief, p. 71). Since Lincoln's flux "is composed *principally* of manganese silicate" (R. 919-20), it cannot be produced by following the teaching of the patent in suit. It is a direct contradiction of that teaching.

Not only does the doctrine of equivalents, on which Linde relies, violate the claims, but it destroys the stated prohibition of use of more than a "*moderate*" amount of manganese silicate. This limitation was not in the first application (R. 1043). It came in the third application (R. 1103, 1110-1) prepared by house counsel for Union Carbide, who were familiar with the prior Miller. To read the patent, in the name of equivalents, as calling for "a major proportion of manganese silicate" would set the claims completely at large.

The nine silicates Linde failed to persuade this Court should be written into claims 24 and 26, it now asks to have written into claims 18, 20, 22, 23. The reasons which kept the nine out of the one group of claims likewise exclude them from the other. Obviously, if, as this Court held, the one group of claims cannot be narrowed by resort to the specification, the other group, now before the Court, certainly cannot be expanded by resort thereto. Otherwise little would be left of the statutory command that the inventor "distinctly claim" however much of his invention he wishes to subject to his monopoly.

Therefore, whatever may be the scope of the doctrine of equivalents, assuming it still to be a vital part of the

law, it cannot be made broad enough to write manganese silicate into this patent.

CONCLUSION.

Linde's invention is protected by the claims as written. As written, those claims have been held valid. They should not be enlarged to cover more. The judgment of infringement should be reversed.

Respectfully submitted,

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February 27, 1950.